



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Michael Ronci

Filed: 01/25/2001

Serial No.: 09/768,560

Title: Temperature Indicating Beverage Cup

Examiner: Verbitsky, G.

Group Art Unit: 2859

DECLARATION UNDER RULE 131

I, Michael Ronci, do hereby declare and say:

My home address is 51 Pinehurst Circle, Ormond Beach, Florida, 32174.

I am the inventor of the captioned invention, having first conceived of the invention prior to August 25, 2000.

I filed a disclosure document with the US Patent and Trademark Office, attached hereto, having disclosure document # 447843 prior to August 25, 2000.

Upon writing a more detail description of the invention, attached hereto, I filed a second disclosure document with the US Patent and Trademark Office, also prior to August 25, 2000.

A copy of the description filed with the disclosure document is attached hereto.

My possession of the invention is supported by the statement of the attachment (found on page 3, 8 lines from the bottom of the page) :

"However, each number would be coated with a material of the transparent/opaque type" ...

, which with related statements describe how a temperature indicative mark, such as the actual temperature is coated with a material that undergoes an opaque to transparent transition as the temperature is reached on heating, to reveal the number or indicator beneath.

I also mailed to my self a copy of the attached disclosure, the envelope has not been opened and is in the custody of my patent attorney. The envelope shows a postmark dated prior to August 25, 2000.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon.

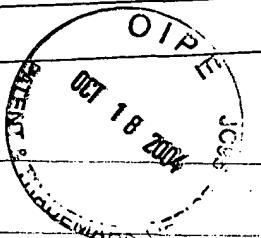
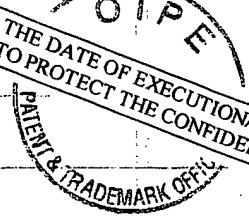
Signed:


Michael Ronci

Date 10/11/2004

DISCLOSURE DOCUMENT NO.

THE DATE OF EXECUTION/RECORD NUMBER IS COVERED
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FILING FEE: \$10.00
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THIS IS NOT A PATENT APPLICATION

(4/96)

... , BEING THE INVENTOR
OF THE DISCLOSED INVENTION, REQUEST THAT THE
ENCLOSED PAPER BE ACCEPTED UNDER THE DISCLOSURE
DOCUMENT PROGRAM, AND THAT IT BE PRESERVED FOR
TWO YEARS.

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THE DATE OF EXECUTION/RECORD NUMBER IS COVERED
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DD #

I, MICHAEL RONCI, BEING THE INVENTOR OF
THE DISCLOSED INVENTION, REQUEST THAT THE ENCLOSED
PAPERS BE ACCEPTED UNDER THE DISCLOSURE DOCUMENT
PROGRAM, AND THAT THEY BE PRESERVED FOR A PERIOD
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PTO-1652 (4/96)

THIS INVENTION IS FOR A MEANS TO MEASURE AND DISPLAY TEMPERATURES, USING MATERIALS WHICH CHANGE FROM OPAQUE TO TRANSPARENT WHEN THE SAID MATERIALS EXCEED A PARTICULAR TEMPERATURE. CURRENTLY, THERE EXIST ADHESIVE STRIPS OF TWO TYPES, WHICH UTILIZE COLOR CHANGING MATERIALS TO DISPLAY TEMPERATURE. ONE TYPE UTILIZES THE TYPE OF MATERIAL DESCRIBED ABOVE (I.E. MATERIALS THAT BECOME TRANSPARENT ABOVE A CERTAIN TEMPERATURE). THE TRANSITION TEMPERATURES OF THESE MATERIALS (I.E. THE TEMPERATURE AT WHICH THEY CHANGE FROM OPAQUE TO TRANSPARENT AND VISA VERSA) CAN BE CONTROLLED DURING THEIR MANUFACTURE, SO THAT THE TRANSITION TEMPERATURE WILL MEET THE REQUIREMENTS OF THE PARTICULAR APPLICATION BEING IMPLEMENTED.

ADHESIVE STRIPS WHICH CURRENTLY USE THESE MATERIALS ARE PIECES OF PAPER, FLEXIBLE PLASTIC OR SOME OTHER TYPE OF LIGHT WEIGHT, THIN AND FLEXIBLE MATERIAL THAT CAN BE ATTACHED TO THE OBJECT WHOSE TEMPERATURE, ONE WISHES TO MEASURE AND DISPLAY. THEY ARE TYPICALLY PRINTED WITH THE WORD 'HOT' OR SOME OTHER SYMBOL OF WARNING, OVER WHICH A THIN COAT OF THE TEMPERATURE SENSITIVE MATERIAL IS APPLIED. THE RESULT IS A STRIP WHICH, WHEN HEATED ABOVE THE TRANSITION TEMPERATURE OF THE TEMPERATURE SENSITIVE MATERIAL, DISPLAYS THE PRINTED WARNING. THESE DEVICES HAVE THE

ADVANTAGE OF BEING EASY TO READ. THEIR DISADVANTAGE IS THAT THEY ONLY TELL WHETHER THE TEMPERATURE IS ABOVE OR BELOW A CERTAIN TEMPERATURE WHICH, FOR SOME APPLICATIONS, IS NOT SUFFICIENT.

THE SECOND TYPE OF STRIP AVAILABLE USES DIFFERENT BUT SIMILAR TYPES OF MATERIALS, KNOWN AS LIQUID CRYSTALS. THESE MATERIALS CHANGE COLOR OVER A CERTAIN RANGE OF TEMPERATURES (THE RANGE CAN BE CONTROLLED DURING THE MANUFACTURING PROCESS). BOTH ABOVE AND BELOW THEIR RANGE, THEY MAINTAIN A CONSTANT BLACK COLOR. STRIPS WHICH USE THESE MATERIALS ARE USUALLY PRINTED WITH A SEQUENCE OF TEMPERATURES. IF, FOR EXAMPLE, YOU WANTED TO MEASURE THE TEMPERATURE OF SOMETHING BETWEEN 80°F AND 100°F AND WANTED THE READING ACCURATE WITHIN 1°F , YOU WOULD TYPICALLY PRINT ON THE STRIP FROM LEFT TO RIGHT, '80 81 82 . . . 98 99 100' AND OVER EACH NUMBER YOU WOULD APPLY A LIQUID CRYSTAL WHOSE RANGE CENTERS AROUND THAT TEMPERATURE. FOR EXAMPLE, THE COATING OVER THE NUMBER 100 WOULD HAVE A RANGE OF 99.5°F TO 100.5°F . AT 100°F , THIS MATERIAL WOULD HAVE THE COLOR CHARACTERISTIC OF THE CENTER OF ITS RANGE (TYPICALLY GREEN) WHILE THE MATERIALS COVERING ALL THE OTHER NUMBERS WOULD REMAIN BLACK. THE EFFECT WHICH THIS WOULD PRODUCE WOULD BE TO DISPLAY THE TEMPERATURE BY MAKING THE NUMBER 100 VISIBLE AND KEEPING ALL THE OTHER NUMBERS HIDDEN. THE 100 WOULD

BE VISIBLE BECAUSE THE COLORS WITHIN THE RANGE GIVE THE MATERIAL A TRANSLUCENCE IT DOES NOT POSSESS WHEN THE TEMPERATURE IS OUTSIDE ITS RANGE.

THE ADVANTAGE OF THIS TYPE OF STRIP IS THAT IT PROVIDES A MORE ACCURATE TEMPERATURE READING. IT'S DISADVANTAGE IS ITS VISIBILITY.

BECAUSE THE LIQUID CRYSTAL NEVER BECOMES COMPLETELY TRANSPARENT, THE TEMPERATURE IS HARD TO SEE IF VIEWED IN POOR LIGHTING OR FROM A DISTANCE.

I HAVE DEVISED A TEMPERATURE MEASURING MEANS WHICH HAS THE ADVANTAGES OF THE TWO TYPES OF STRIPS DESCRIBED ABOVE (I.E. READABILITY AND ACCURACY). IT UTILIZES THE FIRST TYPE OF MATERIAL (THOSE WHICH BECOME TRANSPARENT ABOVE A GIVEN TEMPERATURE) WHILE USING A MEANS OF DISPLAY SIMILAR TO THAT FOUND ON THE SECOND TYPE OF STRIP. BORROWING THE EXAMPLE USED TO DESCRIBE THE TYPE II STRIP, THIS NEW METHOD WOULD LIKEWISE CONTAIN THE NUMBERS '80 81 . . . 99 100', PRINTED FROM LEFT TO RIGHT, EITHER ON A STRIP OR DIRECTLY ON THE OBJECT WHOSE TEMPERATURE IT IS DESIRED TO READ. UNLIKE THE TYPE II STRIP, HOWEVER, EACH NUMBER WOULD BE COATED WITH A MATERIAL OF THE TRANSPARENT/OPAQUE TYPE. EACH NUMBER WOULD BE COATED WITH A MATERIAL WHOSE TRANSITION TEMPERATURE WAS EQUAL TO THE NUMBER COVERED (E.G. 100 WOULD BE COATED WITH A MATERIAL WHOSE TRANSITION TEMPERATURE IS 100).

IN THE EXAMPLE DESCRIBED, THIS WOULD

PRODUCE THE EFFECT OF MAKING ALL THE NUMBERS
VISIBLE WHENEVER THE TEMPERATURE OF THE STRIP
EXCEEDED OR EQUALLED 100° F. AS THE STRIP SLOWLY
COOLS, THE NUMBERS TO THE RIGHT GRADUALLY TURN
OPAQUE, ONE BY ONE. THIS PROVIDES AN ACCURATE
AND VISIBLE TEMPERATURE READING, FOR ONE WOULD
ONLY NEED TO LOOK AT THE RIGHTMOST NUMBER
STILL VISIBLE, TO DETERMINE THE TEMPERATURE.

P.S. THE INVENTION DESCRIBED IN THESE PAPERS WAS
CONCEIVED NO LATER THAN

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FIG. 1

80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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FIG. 2

80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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80 81 82 83 84 85 86 87 88 89 90 91 92 [REDACTED]

FIG. 1 - FIGURE 1 SHOWS AN EXAMPLE OF A TEMPERATURE STRIP THAT USES THE NEW METHOD DESCRIBED. STRIP IS AT A TEMPERATURE OF 100° F.

FIG. 2 - FIGURE 2 DEPICTS THE SAME STRIP AS THAT WHICH IS SHOWN IN FIGURE 1, EXCEPT ITS TEMPERATURE IS 92° F. THE NUMBERS 93-100 ARE OBSCURED BECAUSE THEY ARE COVERED WITH MATERIALS THAT BECOME OPAQUE BELOW 93° , 94° , 95° , 96° , 97° , 98° , 99° , AND 100° , RESPECTIVELY.